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EXAMINER	
FANG, PAKEE	
ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/575,926	SONG, TAE-SUN	
	Examiner	Art Unit	
	PAKEE FANG	4146	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 April 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11,15,16 and 18-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11,15,16 and 18-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 April 2006* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *04/14/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. **Claims 1 – 11 & 15 – 16 & 18 - 25 are presented for examination. Claims 12 -14 & 17 are cancelled.**

Priority

Acknowledgment is made of applicant's claim for foreign priority & domestic priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in the application filed on 04/14/2006.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 04/14/2006 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the *"belt" or "chain", & "epoxy cast"* must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "212" and "211" have both been used to designate the same part on Fig. 5.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet,

even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

4. Claim 19 is objected to because of the following informalities: "tine" should be "line".

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

6. The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4, 18, 19 & 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Claims 4 & 21 recite the limitation "endlessly rotating"; there are insufficient antecedent on the specification of the basis for this limitation in the claim, due to the ambiguous claim language interpretation.

8. Claims 18 & 19 recite the limitation "k" & "i"; there are insufficient antecedent on the specification of the basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1 – 9 & 15 -16 & 20 – 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (US Pub. 2004/0119947 A1) in view of Suehiro et al. (US Pub. 20020024808)

In regard to claim 1, a two-dimensional optical scanning apparatus comprising; See at least (Kim; Fig. 4) – for a two-dimensional image optical projection or scanning system displaying an image on a surface.

a rotating body; "rotation of the cylindrical lens array to achieve color scrolling" [0018]

and at least two linear light sources units disposed on a surface of the rotating body, See at least (Kim; Fig. 4) – for the surface on the rotating body [Item 10] disposed of at least two light beam from at least two sources units (Item 15). "When the cylindrical lens array rotates, light rays passing through the lens cells advance along different paths." [Page 1, abstract]

comprising a plurality of lighting elements that are arranged in a row to emit red, green, and blue light that are modulated according to an image to be displayed. See at least (Kim; Fig. 4) – for a plurality lighting elements (Item 15) that are align in a row to emit red, green and blue light (Item R, G, B) that are modulated to from a picture to be projected on the screen. "The formed picture is magnified by a projecting lens (not shown) and is projected onto a screen." [0010]; but, Kim fails to disclose the peripheral of the rotating body is embedded in light source units. However, Suehiro discloses the peripheral of an image projecting device embedded with multi color light source units in structural setting. "display device 100 in which a plurality of light source devices 205 are arrayed on a housing 101 is shown in FIG. 17." [0316]. Since Kim and Suehiro inventions are both analogous arts addressing an image projecting device. Therefore, it would have been obvious for one of ordinary skill in the art at the time of invention to structure the rotating body of Kim with the peripheral lighting units of Suehiro to display the light in parallel so that the emitted beam can still be orthogonal among the moving direction of the rotating body, because this obvious adjustment will eliminate the reflecting surface, further

simplifying the emitting process, thus lowering the cost of manufacturing for the entire device.

In regard to claim 2, wherein the rotating body is in a shape of a cylindrical drum. See at least (Kim; Fig. 3) – for the rotating body [Item 10] is in a shape of a cylindrical drum.

In regard to claim 3, wherein when the number of linear light source units is n, each linear light source unit is disposed at an angle of 360.degree. /n with respect to an adjacent unit on the surface of the rotating body. Kim discloses there are "N" number lens cells [Item 8] divided at the peripheral or the 360 around the rotating body (Fig. 3 & 4); but fail to mention that they are light source or individual emitters. However, Suehiro discloses the peripheral of an image projecting device embedded with multi color light source units in a structural setting. "display device 100 in which a plurality of light source devices 205 are arrayed on a housing 101 is shown in FIG. 17." [0316]. Since Kim and Suehiro inventions are both analogous arts addressing an image projecting device. Therefore, it would have been obvious for one of ordinary skill in the art at the time of invention to combine the n number of element for a 360 degree rotating body of Kim with the structured peripheral lighting units of Suehiro to display the light to eliminate the reflecting surface further simplifying the emitting process, thus lowering the cost of manufacturing for the entire device.

In regard to claim 4, A two-dimensional optical scanning apparatus comprising; Same Rationale as Claim 1 for motivation to combine the references. See at least (Kim; Fig. 4) – for a two-dimensional image optical projection or scanning system displaying an image on a surface.

a moving body that rotates endlessly; See at least (Kim; Fig. 4) – for a rotary body that rotates all the time to scroll color bar images. "When the cylindrical lens array rotates, light rays passing through the lens cells advance along different paths" [Abstract]

and at least two linear light sources units disposed on the moving body, See at least (Kim; Fig. 4) – for the surface on the rotating body [Item 10] disposed of at least two light beam from at least two sources units (Item 15). "When the cylindrical lens array rotates, light rays passing through the lens cells advance along different paths." [Page 1, abstract]

comprising a plurality of lighting elements that are arranged in a row to emit red, green, and blue light that are modulated according to an image to be displayed. See at least (Kim; Fig. 4) – for a plurality lighting elements (Item 15) that are align in a row to emit red, green and blue light (Item R, G, B) that are modulated to from a picture to be projected on the screen. "The formed picture is magnified by a projecting lens (not shown) and is projected onto a screen." [0010]

In regard to claim 5, wherein the moving body comprises: at least two cylindrical drums; See at least (Kim; Fig. 7) – for multiple cylindrical drums [Item 53] along the moving body.

and an endless belt or chain that is connected between the drums; See at least (Kim; Fig. 3) for a track that is connected between the drums "an endless track is a three-dimensional closed structure (i.e., a loop) rotatable about an axis or axes." & "a cylindrical lens array 10 having

plural lens cells 8 and which can achieve color scrolling by rotating on an endless track" [0035]

In regard to claim 6, wherein when the number of linear light source units is n and a length of the chain or belt is s, each linear light source unit is disposed at a distance s/n with respect to an adjacent unit on the belt or chain. See at least (Kim; Fig. 3) for a finite length of a track that is connected between the drums for rotating the body. "an endless track is a three-dimensional closed structure (i.e., a loop) rotatable about an axis or axes." Kim further discloses n number of elements on the rotating body (Fig. 4) and it's obvious that the Length of the track is divided by the number of elements on the rotating body L/N (L/N); but, Kim fails to disclose the peripheral of the rotating body is embedded in light source units. However, Suehiro discloses the peripheral of an image projecting device embedded with multi color light source units in a structural setting. "display device 100 in which a plurality of light source devices 205 are arrayed on a housing 101 is shown in FIG. 17." [0316]. Since Kim and Suehiro inventions are both analogous arts addressing an image projecting device. Therefore, it would have been obvious for one of ordinary skill in the art at the time of invention to structure the rotating body of Kim with the peripheral lighting units of Suehiro to display the light to eliminate the reflecting surface further simplifying the emitting process, thus lowering the cost of manufacturing for the entire device.

Claim 4 recite all the limitation that Claims 7 & 9 is depended on.

In regard to claim 7, wherein the apparatus has a linear section where the linear light source unit on the moving body is in rectilinear motion. See at least (Kim; Fig. 4) – the rotating body has a straight - forward motion "that is to move rectilinearly upwardly and downwardly at a

constant speed." [0043]

In regard to claim 9, wherein the linear light source is substantially perpendicular to a moving direction of the moving body. . See at least (Kim; Fig. 4) – Light is substantially octagonal with a rotating direction of the rotating body.

Claim 1 recites all the limitation that Claim 8 is depended on.

In regard to claim 8, wherein the linear light source unit is substantially parallel with a rotating axis of the rotating body. See at least (Kim; Fig. 4) – For elements of rotating body is substantially parallel with a rotating axis of the rotating body.

Claim 4 recite all the limitation that Claim 15 is depended on.

In regard to claim 15, wherein each lighting element comprises a light emitting diode chip and an epoxy cast, the epoxy cast having a spherical or aspherical light emitting surface to function as a lens. Kim discloses a light source having an aspherical shape (Fig. 3); but, Kim fails to disclose a light emitting diode chip and epoxy cast in side a LED. However, Suehiro discloses a LED (Fig. 2 Item 20) consisting of an epoxy shell having a spherical surface, functioning as a lens, that includes a chip or circuit (Fig. 20; Item 310, 311, 316, & 317). "an encapsulating member made of light transmissive material such as epoxy resin and glass, light from the light emitting element is emitted after the light is transmitted in the encapsulating member"[0078] Since Kim and Suehiro inventions are both analogous arts addressing an image projecting device. Therefore, it would have been obvious for one of ordinary skill in the art at the time of

invention to combine the rotating body of Kim with the peripheral lighting LED units of Suehiro to transmit light, because this will further enhance the emitting process by reducing the energy lost over the transmission of light in the device, thus lowering the operating cost of the entire device.

Claim 1 recites all the limitation that Claim 16 is depended on.

In regard to claim 16, wherein each lighting element is a light emitting diode of a surface emitter type, of which surfaces are coated by a metal film except for a predetermined area. Suehiro discloses a LED's surface is coated with a metal film (Fig. 48) except for other area in the diode. "a surface of a concaved substrate made of resin or ceramics is coated with a metal film by plating or vapor deposition" [0495]

In regard to claim 20, an image display apparatus comprising; See at least (Kim; Fig. 4) – for a system displaying an image on a surface.

*a rotating body; "*rotation of the cylindrical lens array to achieve color scrolling" [0018]

at least two linear light source units disposed on a surface of the rotating body, See at least (Kim; Fig. 4) – for the surface on the rotating body [Item 10] disposed of at least two light beam from at least two sources units (Item 15). "When the cylindrical lens array rotates, light rays passing through the lens cells advance along different paths." [Page 1, abstract]

comprising a plurality of lighting elements that are arranged in a row to emit red, green, and blue light that are modulated according to an image to be displayed; See at least (Kim; Fig. 4) – for a plurality lighting elements (Item 15) that are align in a row to emit red, green and blue light (Item R, G, B) that are modulated to from a picture to be projected on the screen. "The formed picture is magnified by a projecting lens (not shown) and is projected onto a screen." [0010]; but, Kim fails to disclose the peripheral of the rotating body is embedded in light source units. However, Suehiro discloses the peripheral of an image projecting device embedded with multi color light source units in structural setting. "display device 100 in which a plurality of light source devices 205 are arrayed on a housing 101 is shown in FIG. 17." [0316]. Since Kim and Suehiro inventions are both analogous arts addressing an image projecting device. Therefore, it would have been obvious for one of ordinary skill in the art at the time of invention to structure the rotating body of Kim with the peripheral lighting units of Suehiro to display the light in parallel so that the emitted beam can still be orthogonal among the moving direction of the rotating body, because this obvious adjustment will eliminate the reflecting surface, further simplifying the emitting process, thus lowering the cost of manufacturing for the entire device.

and at least one screen on which the scanned light beam is projected. See at least (Kim; Fig. 4 item 48) – for a screen on which the scanned light is projected "The color image formed by the light valve 40 is magnified by a projection lens unit 45 and projected onto a screen 48." [0038]

In regard to claim 21, an image display apparatus comprising: a moving body that rotates endlessly; See at least (Kim; Fig. 4) – for a system displaying an image on a surface.

at least two linear light sources units disposed on the moving body, See at least (Kim; Fig. 4) – for a rotary body that rotates all the time to scroll color bar images. "When the cylindrical lens array rotates, light rays passing through the lens cells advance along different paths" [Abstract]

comprising a plurality of lighting elements that are arranged in a row to emit red, green, and blue light that are modulated according to an image to be displayed; See at least (Kim; Fig. 4) – for a plurality lighting elements (Item 15) that are align in a row to emit red, green and blue light (Item R, G, B) that are modulated to from a picture to be projected on the screen. "The formed picture is magnified by a projecting lens (not shown) and is projected onto a screen." [0010]; but, Kim fails to disclose the peripheral of the rotating body is embedded in light source units. However, Suehiro discloses the peripheral of an image projecting device embedded with multi color light source units in structural setting. "display device 100 in which a plurality of light source devices 205 are arrayed on a housing 101 is shown in FIG. 17." [0316]. Since Kim and Suehiro inventions are both analogous arts addressing an image projecting device. Therefore, it would have been obvious for one of ordinary skill in the art at the time of invention to structure the rotating body of Kim with the peripheral lighting units of Suehiro to display the light in parallel so that the emitted beam can still be orthogonal among the moving direction of the rotating body, because this obvious adjustment will eliminate the reflecting surface, further simplifying the emitting process, thus lowering the cost of manufacturing for the entire device.

and at least one screen on which the scanned light beam is projected. See at least (Kim; Fig. 4 item 48) – for a screen on which the scanned light is projected "The color image formed by the light valve 40 is magnified by a projection lens unit 45 and projected onto a screen 48." [0038]

In regard to claim 22, wherein the moving body comprises: at least two cylindrical drums; See at least (Kim; Fig. 3) – for the rotating body [Item 10] is in a shape of a cylindrical drum.

and an endless belt or chain that is connected between the drums. See at least (Kim; Fig. 3) for a track that is connected between the drums "an endless track is a three-dimensional closed structure (i.e., a loop) rotatable about an axis or axes." & "a cylindrical lens array 10 having plural lens cells 8 and which can achieve color scrolling by rotating on an endless track" [0035]

In regard to claim 23, wherein the apparatus has a linear section where the linear light source unit on the moving body is in rectilinear motion. See at least (Kim; Fig. 4) – the rotating body has a straight - forward motion "that is to move rectilinearly upwardly and downwardly at a constant speed." [0043]

Claims 10 & 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (US Pub. 2004/0119947 A1) in view of Suehiro et al. (US Pub. 20020024808) and Saitoh et al. (US Pub. 20010019530 A1)

Claim 1 recites all the limitation that Claim 10 is depended on.

In regard to claim 10, further comprising a collimator lens for converting light from each lighting element of the light source unit into a substantially collimated light beam ***or*** *a converging optical element for converting light from each lighting element into a converging light beam.* Kim discloses lenses (Fig. 4 Item 20, 25, 26, 30) for synchronize light, and Suehiro discloses light converges through a member from the source. "a converging member for converging light from the light source"(abstract); but, both fails to discloses a collimator lens for converting light. However, Saitoh discloses a converged beam is converged by the collimator lens. "the beam is converted into a converged beam by the collimator lens 103 and then enters a hologram element 111." [0007]; Since, Kim, Suehiro, and Saitoh inventions are analogous arts addressing controlling of optical light. (Please see claim 1 for motivation to combine Kim & Suehiro) Therefore, it would have been obvious for one of ordinary skill in the art at the time of invention to combine the lens of Kim with the converging member of Suehiro with the collimator lens for converting light of Saitoh to focus the light beam, because this will allow the light traveling inside the component to be more flexible and controllable.

Claim 4 recite all the limitation that Claim 11 is depended on.

In regard to claim 11, further comprising a collimator lens for converting light from each lighting element of the light source unit into a substantially collimated light beam or a converging optical element for converting light from each lighting element into a converging light beam. Kim discloses lenses (Fig. 4 Item 20, 25, 26, 30) for synchronize light, and Suehiro discloses light converges through a member from the source. "a converging member for converging light from the light source" (abstract); but, both fails to discloses a collimator lens for

converting light. However, Saitoh discloses a converged beam is converged by the collimator lens. "the beam is converted into a converged beam by the collimator lens 103 and then enters a hologram element 111." [0007]; Since, Kim, Suehiro, and Saitoh inventions are analogous arts addressing controlling of optical light. (Please see claim 4 for motivation to combine Kim & Suehiro) Therefore, it would have been obvious for one of ordinary skill in the art at the time of invention to combine the lens of Kim with the converging member of Suehiro with the collimator lens for converting light of Saitoh to focus the light beam, because this will allow the light traveling inside the component to be more flexible and controllable.

Claims 24 & 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (US Pub. 2004/0119947 A1) in view of Suehiro et al. (US Pub. 20020024808) and Flint (US Pub. 20020063854 A1).

Claim 20 recite all the limitation that Claim 24 is depended on.

In regard to claim 24, wherein the number of screens is two or more, and each screen is displaced in a different direction from each other. Kim discloses a screen (Fig. 4 Item 48) for projected image or light, and Suehiro discloses light emission techniques; but, both fails to disclose projecting the image onto at least two screens, and the screens are in a different. However, Flint discloses a multi-screen projection system which can project image on multiple screens in different directions on Fig. 1. "A multi-screen laser projection system for projecting images onto a plurality of screens is disclosed". [0008] Since, Kim, Suehiro, and Flint inventions are analogous arts addressing similar projecting system. (Please see claim 4 for motivation to

combine Kim & Suehiro) Therefore, it would have been obvious for one of ordinary skill in the art at the time of invention to combine image projector of Kim with the light emitting elements of Suehiro with the multi-screen projector of Flint to display the image on a variety screens, because this will allow multi-users at different directions to view the content of the display.

Claim 21 recite all the limitation that Claim 25 is depended on.

In regard to claim 25, wherein the number of screens is two or more, and each screen is arranged in a different direction from each other. Kim discloses a screen (Fig. 4 Item 48) for projected image or light, and Suehiro discloses light emission techniques; but, both fails to disclose projecting the image onto at least two screens, and the screens are in a different. However, Flint discloses a multi-screen projection system which can project image on multiple screens in different directions on Fig. 1. "A multi-screen laser projection system for projecting images onto a plurality of screens is disclosed". [0008] Since, Kim, Suehiro, and Flint inventions are analogous arts addressing similar projecting system. (Please see claim 4 for motivation to combine Kim & Suehiro) Therefore, it would have been obvious for one of ordinary skill in the art at the time of invention to combine image projector of Kim with the light emitting elements of Suehiro with the multi-screen projector of Flint to display the image on a variety screens, because this will allow multi-users at different directions to view the content of the display.

Prior Art

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAKEE FANG whose telephone number is (571)270-7219. The examiner can normally be reached on Monday-Friday 9AM-5PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patel Ramesh can be reached on (571)272-3688. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/PAKEE FANG/

Examiner, Art Unit 4146

/Ramesh B. Patel/

Supervisory Patent Examiner, Art Unit 4146